



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference HP214	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/009987	International filing date (day/month/year) 06 August 2003 (06.08.2003)	Priority date (day/month/year) 29 August 2002 (29.08.2002)
International Patent Classification (IPC) or national classification and IPC C07D 311/58, 311/70		
Applicant NISSAN CHEMICAL INDUSTRIES, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16 December 2003 (16.12.2003)	Date of completion of this report 15 April 2004 (15.04.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig. _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-5	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-5	NO
Industrial applicability (IA)	Claims	1-5	YES
	Claims		NO

2. Citations and explanations

Document 1: GB 1121307 A

Document 2: EP 488107 A2

Document 3: Philip E. BROWN et al., "Studies of Chromenes: Part 10. Oxiranes of Nitrochromenes," J. Chem. Soc. Perkin. Trans. 1, 1992, No. 5, pages 573-577

Document 4: Judith RAZAFIMBELO et al., "Synthesis and Cytotoxic Activity of Pyranophenanthridine Analogues of Fagaronine and Acronycine," Chem. Pharm. Bull., Vol. 46, No. 1, pages 34-41, 1998

Document 5: WO 01/85671 A2

Document 6: JP 5-78289 A

The invention that is set forth in claims 1 to 5 is not disclosed in any of the documents that are cited in the international search report; therefore, it is novel.

Claims 1 to 5 do not involve an inventive step in the light of documents 1 to 6 cited in the international search report. Documents 1 to 4 disclose methods for producing aminobenzopyran compounds by reducing the nitro group of a 2,2-dimethyl-2H-1-benzopyran compound by means of hydrogen or the like in the presence of a metal catalyst, whereas claims 1 to 5 set forth inventions that

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reduce by means of hydrazine in the presence of a metal catalyst, which are not disclosed in documents 1 to 4. However, the feature of substituting hydrazine for hydrogen or the like in a nitro group reduction reaction is disclosed in documents 5 and 6; therefore, it would be easy for a person skilled in the art to use hydrazine in the nitro group reduction reactions that are disclosed in documents 1 to 4 in the light of the disclosures of documents 5 and 6.